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Executive Office of Environmental Affairs
Department of Environmental Protection

Compliance and Enforcement Performance Report Fiscal Year 2003

DECEMBER 2003

COMMONWEALTH OF MASSACHUSETTS
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December 17, 2003

MESSAGE FROM THE COMMISSIONER

It is my pleasure to share with you the FY2003 Compliance and Enforcement Performance Report. The report highlights DEP's enforcement activities, its impact on facilities' compliance, and new initiatives to achieve improved environmental results. DEP has continued to maintain a strong compliance and enforcement (C/E) presence in the face of unprecedented resource constraints. Looking forward, DEP is rethinking its strategies to focus on areas with the greatest potential for environmental harm and retooling its systems to more effectively measure and communicate compliance and environmental quality information.

One measure of the Department's FY03 accomplishments is its' conducting 3100 enforcement actions and assessing nearly $9 million of administrative and judicial penalties and payments for environmentally beneficial projects. The report also details the results of compliance rate evaluations conducted to date, and sets out the Department's plans to expand compliance rate analysis and establish environmental outcome performance goals.

In addition to the expansion of outcome measurement performance, the Department intends to launch a set of initiatives exemplifying the expanded role that information, meaningful measurement and streamlined implementation will play. The Wetlands Enforcement Initiative uses advanced digital mapping analysis to detect illegal wetlands alternations. The Strategic Targeting, Assessment and Response program will link environmental indicators and compliance rates to concentrate on the most important and intransigent compliance problems. The Urban Area Compliance Assurance strategy will deploy a range of enforcement and assistance tools to improve environmental quality and boost economic development in cities.

This report is available on our Web site at: **http://mass.gov/dep/enf/enfpubs.htm#reports.** DEP will expand the public availability of performance information as a means to increase understanding and build partnerships to protect and improve the Commonwealth's environmental quality.

Sincerely,

Robert W. Golledge, Jr.
COMMISSIONER

INTRODUCTION

This report provides an overview of the Massachusetts Department of Environmental Protection's (DEP) compliance and enforcement (C/E) performance for Fiscal Year (FY) 2003. As a regulatory agency, with a broad range of responsibilities, an active and diverse enforcement program is key to maintaining a desirable level of deterrence against non-compliance and achieving strategic environmental goals. Fair and consistent enforcement responses by DEP to important compliance problems can be effective in changing the behavior of a wide range of DEP's regulated community. This "deterrence effect" is a fundamental benefit of maintaining a vigorous enforcement profile and communicating the consequences of non-compliance. It also provides a strong regulatory foundation to build innovative and alternative compliance maintenance and assessment strategies.

Measuring performance includes an evaluation of both the number and type of activities that the Department conducts and, more importantly, the impact of the Department's programs on the conduct of the regulated community and the quality of the environment. This output and outcome perspective informs the public of both the focus and results of DEP's C/E resource allocation, and also guides the agency in developing strategies, diagnosing problems and applying the most effective and efficient tools to reach our environmental objectives.

The measures of activity output quantify the level of the Department's field presence and the yield from sector or regulatory targeting choices in terms of lower and higher level enforcement actions and penalties over the prior five years. In addition to putting the C/E outputs into a five-year context, these figures also express the implicit contribution compliance and enforcement makes in deterring future violations and recovering the economic benefit of non-compliance. Traditional output accounting speaks mostly to what we did, but says much less about whether the Department is focused on solving the most important problems in the most effective way. Consequently, the Department continues to expand the development and application of compliance rate outcomes and other measures of changes in the conduct of the regulated community that translate into pollution reduction, risk reduction, and resource protection and enhancement.

In addition to statistical evaluation and analysis, the report highlights new initiatives or the expansion of successful programs. Many strategic regulatory actions targeted at specific sectors or high value resources complement baseline activities, and are designed to achieve improved compliance rates and solve specific environmental problems through an approach that maximizes the effectiveness and efficiency of our C/E investment. These special priority projects are developed and will be implemented around a set of common principles that will become the standard for how the Department conducts its strategic compliance and enforcement going forward:

- Problems will be defined with increased reliance on assessment of environmental monitoring and sector performance data;
- Priorities will be set based on relative risk, resources available to the Department and opportunities for regulatory flexibility;

- Performance measures linked to environmental objectives and compliance rates are an integral component of initiatives' design, operation and evaluation.

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Meaningful performance measurements will be critical to informing strategic targeting and resource allocation decisions become more critical in advancing, or even maintaining, core environmental protection objectives. As DEP begins FY04, its budget has contracted by $19 million and its staffing by over 24 percent, in less than two years. Because the agency continued to place a high priority on maintaining C/E staff levels, allowing only a 5 percent FTE reduction, the agency-wide enforcement outputs were generally consistent with prior years' performance. However, a substantial portion of the FY03 budget-related staff reductions were not effected until the latter part of the fiscal year, so the reported activity measures do not reflect the full impact of the personnel cuts to date.

A commitment to sustain, and in some instances supplement, the allocation of compliance and enforcement resources is essential to meeting our core regulatory obligations and improving the Commonwealth's environmental quality. Looking forward, DEP will need to accelerate and broaden the steps it has begun to improve the effectiveness and efficiency of its C&E operations including:

- Enhanced use of information management systems to link inspectors in the field with centralized facility databases and digital maps; automate the reporting analysis of facility discharge and environmental monitoring data and the generation of C/E documents.
- Greater use of remote sensing, aerial surveillance and digital mapping and other innovative non-compliance detection strategies and equipment.
- Expanding public access to C/E information, environmental results and progress in achieving environmental goals.
- Designing strategies that streamline the compliance assurance process by placing increased responsibility on the regulated community to self-identify and correct violations, and promote environmental stewardship and sustainable practices.
- Making non-compliance substantially more costly than compliance, and capitalize on major opportunities to induce violators to permanently reduce pollution and adopt environmental management systems.

The transformation of compliance and enforcement planning, evaluation and operations that will arise from realizing these directives demands a significant investment of resources. The partnerships DEP is able to build with the public, private and community interests who have an important stake in how the Department conducts compliance and enforcement will play an important role in how rapidly and successfully this transition takes place. In the coming fiscal year, maintaining a vigorous deterrence presence, putting the components of the transition in place and partnership building are the agency's highest priorities.

SECTION 1: OUPUT PERFORMANCE ACCOUNTING

The traditional measure of the Department's compliance and enforcement (C/E) performance was a tabulation of compliance inspections and enforcement actions conducted and the amount of money violators were assessed either directly by DEP or through referrals to the Office of the Attorney General (OAG). Standing alone, output accounting offers a very limited perspective on C/E's strategic contribution to an integrated problem solving strategy. Counting the actions taken doesn't effectively communicate the effect- the link between agency actions taken and compliance-related behavioral changes in the regulated community or the resulting environmental benefits.

Tracking and communicating the level of C/E activity outputs over time does, however, retain important functions. It answers fundamental questions on the relative effort the Department expends to foster deterrence against non-compliance and instills credibility that regulatory limits and permits conditions designed to protect public health and the environment are being enforced. Output assessment also relates how compliance inspection and monitoring translates into enforcement actions, and the resulting cost the regulated community incurs in penalties arising from significant non-compliance. Furthermore, it allows for a comparison of actual to planned results and a baseline in tracking consistency in program, policy implementation and accountability.

The key output performance areas DEP measures are:

1. Total number of inspections conducted.
2. Number of Lower Level Enforcement (LLE) actions taken;
3. Number of Higher Level Enforcement (HLE) actions taken;
4. Monetary amount of administrative and judicial penalties assessed and collected.
5. Monetary amount of environmental alternatives to penalties; and
6. Staff resources committed to compliance and enforcement activities, measured in "Full Time Equivalents" (FTEs).

Agency-Wide Outputs

Inspections

The physical visit to review a regulated site's or facility's compliance status, i.e. the traditional inspection, presently remains the mainstay of DEP's compliance assessment program. Inspections are conducted for a variety of reasons, such as: planned as part of a program's standard compliance assurance targeting of a sector, program specific follow-up at a facility that has been the subject of a prior compliance assurance inspection, or an investigation in response to citizen complaints. In addition to administrative inspections, the Environmental Strike Force also conducts investigations to determine if a criminal prosecution should be pursued in conjunction with the OAG.

The inspections reported in Table 1 below only include the inspections that lead up to the commencement of the enforcement action. The Table does not include the inspections that follow in most instances to track compliance milestones, conduct sampling, collect monitoring data or verify the accuracy of information submitted by the violator. Table 1 also does not include DEP's fieldwork at hazardous waste spills and releases that present an imminent threat to public health, safety or the environment. Last summer, for instance, the oil released into the water and shoreline of Buzzards Bay from the rupture of a tanker's hull triggered over 400 site inspections by DEP to assess the damage and coordinate and monitor the clean-up, none of which are included in the compliance inspection count.

Table 1 Total Compliance and Enforcement Actions

Action	1999	2000	2001	2002	**2003**	5 Yr. Avg.
Compliance Inspections	7046	7073	7626	7066	**5879**	6938
LLE	2686	2649	2952	2472	**2506**	2653
HLE-Administrative Actions	453	550	466	612	**573**	530
HLE-Referrals	NA	43	39	48	**27**	22

DEP continues to invest significant inspection resources at facilities permitted to emit large volumes of air or wastewater pollutants and industrial operations generating large volumes of hazardous waste, so called "major"[1] facilities. Last year, DEP inspected 34 percent of the major air pollution sources, 16 percent of the major hazardous waste management facilities, 20 percent of the major industrial and 58 percent of the municipal major NPDES (surface water discharge) permit holders. Overall, DEP inspected 19 percent of the major multi-media facilities; facilities which hold permits for one or more major sources.

Inspections declined 17% between FY02 and FY03. The decline can be primarily attributed to staff reductions and triaging staff to concentrate on following through on the enforcement of known violations.

Inspections are not the only, or in some programs even the primary, means to promote compliance and identify violations. Many regulations and permits compel the facility/site owner to monitor and report its compliance with permit/regulatory limits as well as the impact of its activities on the environment. Consequently, DEP receives hundreds of thousands of submissions annually containing compliance and ambient sampling and monitoring data, lab reports, facility compliance certifications and site assessment and clean-up evaluations. The Bureau of Resource Protection (BRP) alone received over 63, 000 compliance reports related to public water supplies and surface/groundwater monitoring and discharge limits.

[1] For example, a major air quality source is defined as one with the potential to emit 50 tons per year of oxides of nitrogen (NOx) or volatile organic compounds (VOC), 10 tpy of a single hazardous pollutant or 25 tpy of any combination of hazardous pollutants, or 100 tpy of any other pollutant.

The volume and variety of compliance reports make it currently infeasible to comprehensively track the reports that trigger an enforcement response. DEP's efforts to automate the electronic filing and evaluation of compliance reports will allow the Department to manage and analyze it data far more effectively, including the capability to target and design enforcement responses based on sector compliance profiles.

Lower Level Enforcement

Lower Level Enforcement (LLE) actions include a variety of Notices of Non-Compliance (NON). NONs are generally used to require correction of minor compliance problems, provide notice that an existing practice is unacceptable, and/or take the first formal step before issuing administrative orders and penalties, if problems are not corrected or reoccur.

Higher Level Enforcement

Higher Level Enforcement (HLE) includes a range of separate or combined enforcement actions, including: administrative orders, penalty assessments, and permit and license sanctions. The HLE category also includes referrals to the Licensed Site Professional Board for potential disciplinary actions against LSPs who fail to meet professional standards in the oversight of hazardous waste cleanup actions under the Massachusetts Contingency Plan. HLE can also result in referrals to the U.S. Environmental Protection Agency (EPA) or the OAG for civil or criminal prosecution.

The number of administrative enforcement activities did not change substantially over the fiscal year, with LLE increasing by 1% and HLE decreasing by 6%. FY03 HLE maintained its higher plateau over the FY99-FY01 period, despite the budget and staff reductions experienced over the last two fiscal years. This performance reflects the strategic choice made to dedicate sufficient staff to ensure that outstanding cases were actively followed through.

In July of 2000, the Department concluded Administrative Consent Orders with state agencies that established timelines to remediate the remaining 1,400 non-compliant matters to be addressed under the Clean State Initiative. In FY03, state agencies resolved 110 outstanding matters bringing the total to almost 1000 matters resolved over the past three fiscal years.

Bureaus' Outputs

As shown in Table 2, across the three Bureaus, the general five-year trend toward higher output levels was sustained, although there is variability in emphasis between lower and higher level enforcement tools. As discussed below, variations result from balancing many factors including the relative risk and environmental impact of the facility/site, environmental justice, enforcement history, citizens' complaints, regulatory timeframes and the size of the regulated universe that is the target of a strategic program initiative.

The fact that enforcement levels were relatively stable despite a reduction in inspections is indicative of the increased emphasis being placed on reviewing compliance related reports to determine whether facilities are meeting permit conditions and regulatory requirements. BRP and BWP both experienced 20-25% reduction in inspections, but HLE cases increased by almost 10% in BWP while the BRP HLE reduction was statistically insignificant. As the transition towards greater reliance on compliance certifications, electronic filing and evaluation of compliance reports becomes the established practice, the generation of more enforcement actions from reports reviews will become the norm.

Table 2 Bureau Compliance and Enforcement Actions

Bureaus	1999	2000	2001	2002	2003	5 Yr Avg.
Bureau of Waste Prevention						
Compliance Inspections	2432	2576	2459	2763	2073	2461
LLE	852	862	563	696	687	732
HLE Administrative and Referrals	152	191	164	209	206	184
Bureau of Waste Site Cleanup						
Compliance Inspections	1292	1277	1688	1387	1563	1441
LLE	693	830	1249	1004	1113	978
HLE Administrative and Referrals	199	138	150	217	159	173
Bureau of Resource Protection						
Compliance Inspections	2742	2688	3015	2387	1949	2556
LLE	1141	957	1140	772	706	943
HLE Administrative and Referrals	245	226	179	211	229	218

Note: The sum of the Bureaus inspections will be less than the total inspections on Table 1. Table I includes inspections by the Environmental Strike Force and the Wall Experiment Station.

More generally, changes in annual outputs are also influenced by:

- Warning Letter and Notices of Deficiency- Strategic use of these techniques can more efficiently lead to a correction of minor violations and conserve the expenditure of resources required to commence formal enforcement actions.

- The maturity of enforcement strategies- The first year or two of an enforcement initiative is likely to yield more HLE actions for the number of inspections, but as the deterrent effect of enforcement is felt, the number of repeat offenders declines, compliance rates improve and fewer HLE actions are generated. Many of the large wastewater treatment facilities are now operating under administrative consent orders generated over the last five years. While inspections and monitoring activities are conducted to ensure the facilities are meeting their long-

term return to compliance schedules, the lack of new HLE actions is a measure of the initiative's success. Similarly, a number of the Bureaus have instituted compliance strategies that rely on the prompt and consistent issuance of NONs, followed by small standardized penalties for repeat violations, for reporting and monitoring types of violations. The decline in LLE reflects the success of those strategies in increasing the compliance behavior of the regulated sector.

- Regulatory and compliance policy schedules- Time staggered compliance schedules are adopted to advance broader programmatic goals, such as the five-year watershed basin schedule, to accommodate water resource assessment and community planning. The concentration of different types of permitted facilities in the particular set of basins can also have a significant effect on compliance and enforcement outputs. Compliance initiatives targeting permit renewal milestones or specific industry sectors also influences annual outputs.

- Variations in the regulated universe- The sectors regulated by BRP have a large component of municipal facilities and the BWSC universe has a significant component of homeowners, small business or insolvent corporations without the financial capability to come into compliance, while BWP's universe ranges from the largest industrial manufacturers and waste management facilities down to the local dry cleaner or gas station. Achieving and maintaining compliance in each of these sectors requires a different strategic problem solving approach and balance of a range of compliance, enforcement, and compliance assistance tools.

Environmental Strike Force

The Environmental Strike Force (ESF) teams up DEP, the Environmental Police, and the OAG to investigate and prosecute criminal and major civil environmental violations. Chartered in 1989 and headquartered at DEP, the ESF focuses on violations where there is a high risk to human health or sensitive resources including illegal discharges/disposal of toxics or asbestos, and where there is knowing and intentional fraudulent activity designed to circumvent compliance. The ESF staff also conducts and coordinates investigations and provides technical support as part of major administrative enforcement initiatives. In FY03, for instance, the ESF assisted BRP conducting aerial flyover inspections of illegal wetlands' alterations, which were targeted through computer analysis of historical photographs depicting changes to land areas over the last decade.

Table 3 Environmental Strike Force

	1999	2000	2001	2002	**2003**	5 year Avg.
Inspections	462	492	434	497	**277**	432
HLE Referrals	10	14	15	12	**6**	11

ESF investigations led to 2 criminal convictions and 5 civil actions being filed and 5 others concluded in FY03 including:

- The criminal conviction of the owner and general manager of a Southbridge metal fabricating company for directing company employees to illegally heat containers of waste paint thinners and solvents, and to illegally dump drums of industrial wastewater onto the ground behind the facility.

- A civil judgment against a health club for discharging 35,000 gallons of chlorinated pool water into a drainage ditch that led to a nearby brook, killing an estimated 1500 fish. As a part of the settlement, the health club paid a civil penalty and an additional amount to the Massachusetts Environmental Trust to fund riverbank and stream bank cleanup of the Merrimack River and its tributaries in Haverhill.

- A civil settlement against a company marketing an unapproved septic treatment system that created fissures in the soil so untreated sewage would flow out of the system. In addition to a cash penalty, the settlement required that the manufacturer cease marketing the system in Massachusetts to publish a statement in a regional trade magazine notifying septic service companies that the system is not approved.

Staff Resource Allocation

This fiscal year showed a 4% decline in staff time dedicated to C/E activities, which demonstrates DEP's commitment to prioritize C/E in adjusting to a nearly 20% reduction in staff over the past two years.

Table 4 Full-time Equivalent Staff Allocated to Permitting and C/E

	1999	2000	2001	2002	**2003**
Permitting	104	105	104	109	**107**
C&E	148	154	154	161	**154**

Penalties and Fines

The assessment of monetary penalties serves several purposes. It acts as a deterrent by exacting a price for non-compliance beyond the expenditures required to return to compliance and remediate the damage caused. In appropriate cases, the penalty also reflects the economic benefit the violator may have obtained by avoiding or deferring compliance-related costs or investments. Penalties also send a message to the regulated community that compliance avoidance will not give you an economic advantage.

Table 5 Administrative Penalties and Judicial Fines

	1999	2000	2001	2002	**2003**	5 year Avg.
DEP total $ for Administrative Penalties	$1,571,298	$1,613,430	$2,671,011	$3,432,743	**$2,819,046**	$2,421,525
DEP and AG total	$3,157,060	$5,677,430	$3,457,011	$6,041,668	**$3,712,171**	$4,409,087
Environmental Alternatives to Penalties	$515,055	$534,225	$780,207	$625,610	**$5, 286,938**	$548,407
Total Penalty Environmental Alternatives	$3,672,115	$6,211,655	$4,237,218	$6,667,278	**$8,999,109**	$4,957,495

Administrative penalties are assessed through Administrative Consent Orders with Penalties (ACOP) or Penalty Assessment Notices (PAN). Slightly more than 50 percent of all HLE actions required payment of a penalty. The number of PANs issued in FY03 increased by over 30 percent, while the number of ACOPs declined by 20 percent. The overall average penalty was $9,400 with an average negotiated penalty (ACOP) of $6,360 and an average unilateral penalty (PAN) of $14,510.

Administrative penalties assessed in FY03 declined approximately 18 percent over FY02's record levels, but still remained at the second highest amount for the prior five years. The decrease in penalty dollars is primarily a function of the 15 fewer penalty actions concluded in FY03; particularly the 49 less ACOPs that in FY02 averaged over $10,200 per consent order. The OAG criminal collection also significantly declined, but the FY02 amount was dominated by an exceptional $1.4 million criminal penalty and restitution.

Negotiated settlements often consume more time than it takes for the Department to issue a unilateral order or penalty. However, one of the important returns on that investment is that consent orders allow for alternatives or supplements to penalties that produce broad and permanent environmental results without sacrificing the deterrence value of making non-compliance more costly than compliance. The Environmental Alternative to Penalties (EAP) category in Table 5 represents the estimated value of the cost incurred by violators to fund environmentally beneficial activities. These alternatives may require violators to establish and maintain Environmental Management Systems (EMS) which help facilities integrate sustainable compliance activities into routine business operations, fund Supplemental Environmental Projects (SEP) which can provide a wide range of environmental benefits, or assess and install pollution prevention methods and equipment that reduce the volume and toxicity of chemicals used and waste streams generated.

A recent example of the use of an ACO to affect a mutually beneficial outcome is the resolution of the construction problems associated with the extension of the Hubline gas pipeline through Boston Harbor. An ACO was negotiated that allowed construction to continue contingent upon a mitigation payment of $5 million, directed towards fishery resources mitigation and construction monitoring.

Additional examples of environmental alternatives negotiated through administrative consent orders can be found at DEP's website[2].

Urban Environmental Initiatives

In October 2002, the Executive Office of Environmental Affairs adopted an Environmental Justice Policy that, in part, charged DEP with making environmental justice (EJ) a priority in planning and implementing its C/E program. The policy designated certain census blocks as EJ Population area based on the demographic character of the residents.[3] Although the delineation of an EJ Population area is relatively new, the Department's activities in low income and minority communities are long standing.

There are some general considerations that are important in evaluating DEP's C/E performance in EJ communities. First, residents that live in EJ areas are often affected by compliance issues that impact the entire municipality, such as the quality of the drinking water or the performance of the waste water treatment system that discharges into the community's watershed. In other instances, facilities located outside the EJ area, such as major air sources or surface water dischargers, can have substantial impacts on neighboring communities depending on the direction the wind blows or water flows. In addition, the location distribution of facilities is a major factor influencing the ratio of total inspections to inspections in EJ areas. In general, the inspection rate for facilities in EJ areas reflects the percentage of the permitted universe located in EJ areas.

Inspections and Compliance Assurance

The Bureau of Waste Prevention (BWP) regulates activities affecting air quality, hazardous and solid waste management and industrial wastewater dischargers. BWP estimates that between 12 percent and 30 percent of its regulated facilities are in EJ areas. This profile is based upon an analysis of the database using four sectors: gas stations, major air water and waste permittees, solid waste facilities and the Environmental Results Program (ERP) sectors, which includes dry cleaners, photo processors and printers. Table 6 indicates a high correlation between the percentage of regulated facilities in EJ areas and the percentage of inspections within those areas conducted by BWP.

2 http://mass.gov/dep/enf/enfpubs.htm - reports

[3] Census blocks where 25 percent or more of the residents are minorities, foreign born, or lacking English proficiency, or whose median annual household income is at or below 65% of the statewide median income.

Table 6 Profile of BWP Inspections in Environmental Justice Areas

Type of Inspection	# of Inspections in EJ Area	# of Inspections outside EJ Area	% of EJ Inspections	% Permitted Facilities in EJ Area
Majors Facilities [1]	37	63	33%	31.5%
HW Initiatives[2]	19	29	25%	NA
Solid Waste Initiatives	46	335	12%	12.2%
Complaints	19	29	39%	NA
Air Quality 2	27	48	36%	NA
Asbestos	199	600	43%	NA
ERP- All active sectors	8	12	41%	30.0%
STAGE II [3]	19	66	23%	26.2%
Discretionary Initiatives	31	62	33%	NA
Outside the System[4]	8	32	19%	NA
X-Bureau Initiatives[5]	8	29	21%	NA
TOTAL	247	789	**24%**	

1. These facilities hold major permits in the Air Quality (AQ) Hazardous Waste (HW) or Industrial Wastewater (IW) sectors.
2. These facilities in these initiatives do not include major permit holders.
3. Stage II facilities are generally automotive service stations with vapor recovery systems at the gas pumps.
4. Facilities that should but do not have DEP permits.
5. These are cross- Bureau initiatives involving both BRP and/or BWSC

A related major compliance assurance activity is the audits conducted by the Bureau of Waste Site Cleanup of the assessment and cleanup activities of sites contaminated by oil or hazardous wastes. Over the past three years, the audit program has inspected more than 36 percent of the EJ located sites.

Enforcement

Based on a statistical sample of FY03 enforcement actions, approximately 28 percent of enforcement actions were issued against facilities in or in close proximity to EJ population areas. However, not all of the Department's data systems currently have the capability to retrieve enforcement information based the facility's address.

Also, these statistics do not convey the relative importance of the actions and the benefit achieved for the residents through enforcement actions taken by the Department on facilities and activities that impact EJ areas including, for example:

- Installation of drinking water filtration equipment at public water supplies that serve many EJ communities.
- Enforcement at wastewater treatment facilities to address air quality emissions, nuisance odor complaints and elimination of excess discharges of sewage and other water contaminants into rivers.
- Oversight and enforcement at demolition and renovation projects to ensure that asbestos is properly removed and disposed.
- Enforcement against illegal dumping and burning of construction and demolition debris.

- Enforcement to correct failure to timely report and implement a Imminent Response Action for the releases of hazardous wastes, and failures to clean up waste sites in accordance with regulatory timelines and performance standards.
- Technical assistance and enforcement directed to auto body shops and other operations using paint spray booths that can emit odors and volatile organic compounds.
- Actions taken against diesel bus operators for excessive engine idling that emit fine particulates in urban areas.

SECTION 2: OUTCOME PERFORMANCE MEASURES

Measuring the effectiveness, not the quantity of compliance and enforcement activities how DEP will evaluate and direct planning and implementation of our C/E operations. Profiles of sectors' compliance rates provide important information to the agency and the public. Compliance rates serve as a surrogate indicator to assess how significant an environmental impact a particular sector may be having on protected resources or public health. This in turn can be an important factor in determining where the public should focus its concern and the Department direct its' resources. As a first step to increase the public's access to information and capacity to inform our decisions, DEP created a link on our web site[4] to a wide array of the agency's environmental goals, performance measures and outcomes.

In making the connection between the rate of compliance and the state of the environment, it is important to acknowledge that evaluating compliance performance often depends on the quality of the data, which can vary based on its reliability, accuracy and completeness. The investments being made in electronic reporting and management of compliance data and in auditing facility certifications and site remediation are designed to increase the amount and improve the quality of compliance data in order to enhance its value in strategic planning and decision-making. As demonstrated in several of the sector analyses below, compliance measurement has proven to be an effective yardstick in identifying where particular enforcement tools have been most successful and where different techniques or resources should be applied to achieve the environmental goals.

The discussion below highlights the compliance status of a range of regulated sectors. Some have been the subject of strategic enforcement initiatives which were designed to respond to patterns of chronic non-compliance; and others were part of annual target selections based on a more general mix of risk, geographic and programmatic priority factors. Sectors that have been the subject of more comprehensive compliance strategies (CCS) will tend to have more robust data trends and analysis. As described below, the Bureaus recently identified segments of their regulated universe that will be subject to a more in-depth and consistent set of C/E performance measurements that will provide a basis from which to compare compliance performance across different sectors.

Public Drinking Water Supplies

The public water system sector includes a range of drinking water supplies that are generally categorized based on the size and type of their customer base. It covers community systems serving residential populations through non-transient non-community systems such as schools, office parks and residential-type institutions, to transient non-community systems (TNC) such as restaurants or campgrounds that only serve short-term customers.

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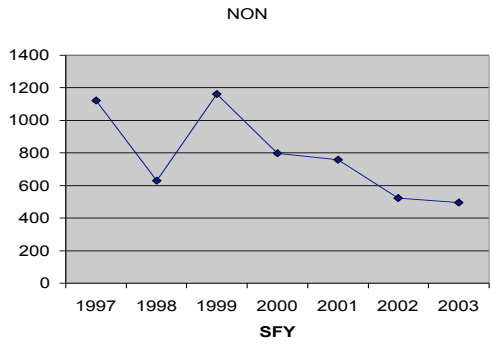
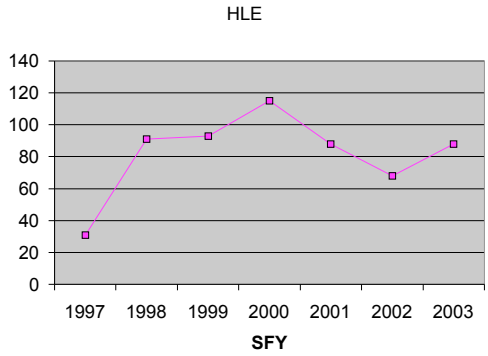
4 http://mass.gov/dep/bspt/spe/perform.htm.

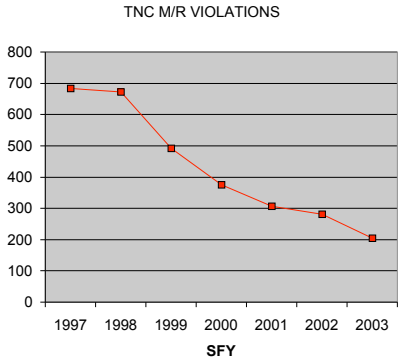
Across the entire Commonwealth there were no known waterborne disease outbreaks and 94 percent of all 1,680 public water systems met all federal and state drinking water standards, including health-based limits. These community public water systems serve 87 percent of the population. Both of these figures represent a very slight decline from the compliance levels reached in the previous year, due to the implementation of new regulations, including, for example, new public notification requirements and the disinfection by-products rule.

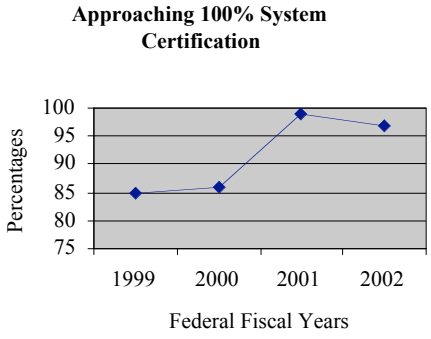
Since 1998, BRP has implemented a strategy to increase public water supplier compliance. The strategy combines compliance assistance with consistently escalating enforcement for chronic non-compliance. After peaking in FY00, HLE against public water suppliers declined rather dramatically. With some annual variations, the volume of HLE is now holding relatively steady at this reduced level. The initial peak, followed by a decline in enforcement actions indicates the success of the strategy because it can be directly traced to improved compliance. In concert with the HLE trend is the more striking reduction in NONs. Over the course of the state fiscal year, the drinking water program issued less than half the SFY99 volume of NONs. For five years running the number of NONs has declined, which indicates success in improving compliance.





The transient non-community (TNC) compliance initiative continues to yield encouraging results. Since water supply is not the primary business of TNCs, they do not typically think of themselves as public water systems. The drinking water program uses the TNC compliance rates to gauge the overall effectiveness of all drinking water C/E efforts, as TNCs were historically the most frequent violators.

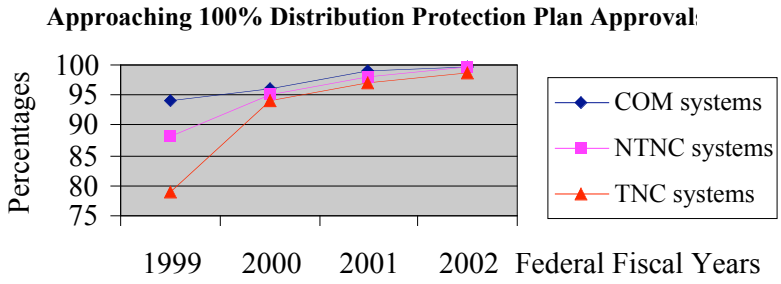




Monitoring and reporting violations among TNCs fell by 70% from FY97 through SFY03, commencing with the 1998 debut of the enforcement strategy. This improvement reflects both an increased professionalism among TNC certified operators, fostered by BRP, and an effective enforcement deterrent. Over the course of the last fiscal year, the following compliance accomplishments were attributed to the TNC compliance initiative:

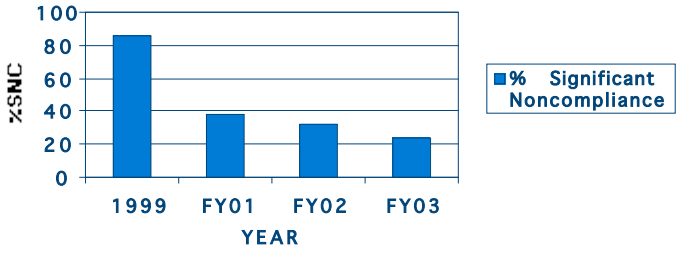
- 97.6% of TNC systems had approved distribution protection plans; and
- 96% of TNC systems (96%) had a certified operator.

Due to tremendous improvement within the TNC sector, 97.3% of all public water supply systems are now in compliance with certified operator requirements, a big step toward ensuring safe drinking water for their customers. In addition, 99.2% of all public water supply systems now have approved distribution protection plans.



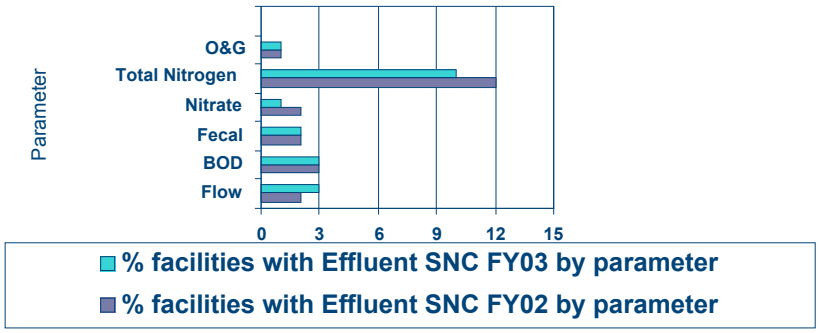
Groundwater Compliance

BRP adopted a strategy in FY01 to address non-compliance with permit requirements allowing the discharge of wastewater into the ground. It established significant non-compliance (SNC) thresholds[5], and set up mechanisms for timely issuance of NONs for SNC violations and reviews of discharge monitoring data. The strategy was successful in reducing the overall SNC violation rate from an estimated baseline of 80 percent down to 23 percent.



[5] The four requirements examined were: (1) discharge monitoring report (DMR) submittal; (2) timely renewal application submittal; (3) meeting groundwater quality standards in monitoring wells; and (4) meeting permitted discharge effluent limits.

However, while the instances of reporting and monitoring violations were reduced to five percent or less, SNC violations of effluent limits plateaued at 20 percent. An analysis of the effluent SNC violations for FY02 and FY03 showed that violations of total nitrogen (TN) were the most common effluent SNC, 3 to 4 times more numerous than violations of other effluent parameters. The groundwater discharge program's goal in FY04 is to reduce total nitrogen to better protect drinking water and surface water.



Discharge to Surface Waters

Over the course of FY03, BRP performed permit compliance inspections at 54 major and 79 minor facilities with NPDES permits to discharge treated wastewater into surface waters of the Commonwealth.[6]

Discharge monitoring reports (DMR) are a key source of facility compliance data for inspection targeting. Of the entire universe of BRP NPDES permittees, 26 percent had some incidence of non-compliance reflected on their DMRs at some point over the year, however most of these violations had an insignificant impact. These include one-time excursions from permit limits due to temporary plant upsets, or violations not directly related to effluent quality, such as failure to report specific data or failing to report on time.

For FY 2003, 11 percent of BRP NPDES facilities had violations that constituted significant noncompliance (SNC) as determined by EPA, based on facility DMRs. This is nearly double the FY02 SNC rate of 6%, although still significantly less than the FY 2001 SNC rate of 23 percent. The FY03 increase is primarily the result of greater than normal precipitation. Many facilities reported plant flows significantly above their average design and/or peak flow rates, which resulted in violations of conventional pollutants such as biochemical oxygen demand (BOD) and total suspended solids (TSS).

[6] The number of NPDES facilities that are inspected annually for permit compliance varies based on five factors: (1) coordination of facility inspections with the U.S. Environmental Protection Agency (EPA); (2) scheduling of watershed basins for BRP compliance reviews as part of the five-year Basin Cycle; (3) verification of compliance with milestones contained in existing enforcement orders; (4) response to complaints; and (5) review of monthly Discharge Monitoring Reports (DMRs).

Associated with this were violations of the standard percent removal rates required for BOD and TSS. Recently modified NPDES permit language specific to Inflow/Infiltration (I/I) is designed to require more effective I/I reduction efforts in communities where this situation is a problem. All SNC violators were subject to enforcement actions initiated by either BRP or EPA New England (Region 1).

The extremely stringent copper limit at many publicly owned treatment works (POTWs) accounts for a significant portion of the total number of facilities reported as SNC. Nearly three quarters of facilities on EPA's SNC list are only SNC for violations of their copper limits. The Department is developing more site-specific copper criteria for Massachusetts in accordance with EPA guidelines. The proposed criteria will be submitted to EPA for review early in FY04.

Assessment and Remediation of Hazardous Waste and Oil Contaminated Sites

Since October of 1993, the identification and cleanup of contaminated sites has been conducted under a regulatory program, the Massachusetts Contingency Plan (MCP), that relies in large measure on property owners and their Licensed Site Professionals to conduct assessments and implement remediation plans in accordance with the standards and timetables established in the MCP. Approximately three-quarters of the nearly 22,000 sites that entered the MCP system between October of 1993 and FY03 were contaminated with oil products (heating oil, gasoline and diesel fuel) and approximately one-quarter involved hazardous materials alone or mixed with oil products. During that time period, 75 percent of all sites have been closed out in compliance with the MCP.

Once a release of oil or hazardous material (OHM) is reported, it is important that the responsible party complete the assessment and cleanup of the site in a timely manner. According to the MCP regulations, this tier classification needs to occur within one year of reporting a release of OHM. Once a site has passed the one year anniversary without tier classification, it is automatically classified "Default Tier 1B" by DEP and is considered out of compliance with the MCP.

From FY00 through FY03, the primary tactical goal of BWSC's enforcement effort was to improve compliance with the first major cleanup deadline applicable to all waste sites and substantially reduce the Default Tier 1B backlog. BWSC developed a multi-faceted compliance strategy that attempted to account for the wide range of variables in the regulated community:

- Anniversary reminder letters were issued to sites approaching their one-year tier classification deadline. A significant improvement was noted with major decreases in the creation of new Default Tier 1B sites. The annual average of new Default Tier 1B sites had been about 300 per year. In FY03 it was 163, a 50 percent reduction in non-compliance.

- For sites with viable PRPs, DEP instituted a phased enforcement strategy, in which Notices of Noncompliance (NONs) were issued to the PRPs followed by

higher-level enforcement when necessary. DEP discovered that NONs alone resulted in compliance in approximately 80 percent of cases.

- Homeowners comprise a significant portion of remaining Default Tier 1B sites. DEP's approach to homeowners has focused on technical assistance, holding back on enforcement in many cases while homeowners move through the MCP process. DEP is working with outside stakeholders to review future options for better addressing homeowner MCP issues.

BWSC's focused FY00-03 enforcement effort was successful in stemming the growth of Default Tier 1B sites. The total number of Default sites has been reduced by 17%, and BWSC closely monitors sites to ensure that new Default sites are quickly addressed.

In FY03, BWSC began to expand its enforcement effort to two inter-related areas of noncompliance: violations of the deadline for completion of site cleanups and violations of performance standards for such cleanups. Massachusetts's cleanup regulations require comprehensive cleanup of all sites no later than five years after completion of a preliminary site assessment. The regulations specify strict quantitative and qualitative performance standards that all cleanups must meet.

In FY03, numerous penalty actions were taken to address violations of the cleanup deadline. These penalties, which tend to be higher in dollar value than penalties for other violations, contributed to BWSC setting the highest five-year levels for total assessed penalties. This trend toward using penalties as the primary tool to promote deterrence will continue in FY04.

Industrial, Commercial and Waste Management Facilities

The major facilities in the category include a diverse population of facilities operating under permits controlling substantial air quality or industrial wastewater emissions or the use and management of hazardous chemicals or waste products. Fifty-five percent of the facilities are categorized as major solely because of their use of toxic chemicals. Through a combination of inspections and monitoring and their internal compliance management, major facilities maintain reasonably good compliance. For example, of over thirty- five inspections at major facilities in the southeast region, only one was found with significant noncompliance during FY03. In those instances where non-compliance does not present an actual or substantial threat to public health or the environment or is not part of a pattern of non-compliance, a lower level enforcement (LLE) document is issued. If the violation is serious or the NON is ignored, higher-level enforcement (HLE) is taken.

As reflected in Table 7, because of the scope of their operations and the level of regulatory detail, it is not unusual to find minor violations at these facilities to which the appropriate response is a NON. The enforcement rate for the combined major facilities sector rose slightly between FY02-03, from a LLE of 37 percent to 45 percent, and a HLE rate from 8 percent to 11 percent.

Table 7 BWP Sector LLE/HLE Rates

SECTOR	UNIVERSE OF FACILITIES	NUMBER OF COMPLIANCE MONITORING ACTIONS	% OF UNIVERSE INSPECTED	LLE ENFORCEMENT RATE [A]	HLE ENFORCEMENT RATE [B]
Air Majors	180	61	34%	21%	8%
Haz. Waste Majors	1000	158	16%	47%	11%
Industrial Waste Water Majors	41	8	20%	25%	0%
Stage II	3114	113	4%	79%	5%
ERP	2266	62	3%	58%	5%
Solid Waste	672	199	27%	19%	10%

a. The percentage of LLE taken of total enforcement actions
b. The percentage of HLE taken of total enforcement actions

Stage II (gasoline fuel dispensers) and Environmental Results Program (ERP) facilities (dry cleaners, printers, photo-processors) are generally small to mid-size operations. DEP's experience has demonstrated that a substantial proportion of those owners/managers will respond to consistent outreach and lower-level enforcement to maintain or return to compliance for their core operations that impact air and water quality discharge limits.

DEP has used a combination of annual reporting/certification requirements and consistent LLE enforcement for small businesses, but HLE actions against corporate chains and franchise operations have been instituted where persistent patterns of non-compliance have been discovered. Walgreens' pharmacies, for instance, were found to have violated the photo processing and hazardous waste regulations at many of their stores. The result was an ACO with a substantial penalty and an environmental compliance initiative that includes a comprehensive compliance audit of all its Massachusetts photo processing facilities and the development of compliance and training policies and procedures to be integrated into its Massachusetts photo processing operations to ensure on-going compliance.

Over the past decade, solid waste management facilities have seen a shift from municipal to large corporate control of landfills and a major expansion of recycling and processing facilities for municipal, construction and demolition waste. The solid waste universe is composed of 40 percent transfer stations/recycling related facilities, 25 percent closed landfills and 35 percent active landfills/municipal waste combustors. Within the solid waste category, 50 percent of the NONs and 80 percent of the HLEs was attributable to violations at landfills, with the balance of HLEs at transfer stations and composting facilities.

POLLUTION REDUCED

While each enforcement action creates a deterrent effect for the violator and potentially for a sector as a whole, some types of enforcement actions provide an opportunity and incentive for the violator to reduce the pollution or toxic material inputs associated with the facility's operations or adopt environmental management systems which enable facilities to take a systematic approach to manage and reduce their environmental impact. Input substitution, redesign, modernization and improved operation and maintenance of manufacturing production units can be leveraged as part of higher-level enforcement actions. In many cases, pollution prevention benefits will increase over time but can't be determined at the time of the enforcement action because of the time lag from the date of the enforcement action to the date the emission reduction equipment is installed or the process change is operational. Statewide in FY03 such measures resulted in a documented reduction of at least 20 tons per year (tpy) of VOCs, 80 tpy of lead, 13 tpy sulfur dioxide and other hazardous air pollutants including polystyrene and fine particulate. Orders requiring recycling, reuse and water conservation this year resulted in a savings of over 25,000 gallons per day of industrial water use and the resulting reduction in industrial wastewater. Enforcement negotiations resulted in 9 EMS/SEPs with pollution prevention components.

FY04 Measurement Objectives

Over the course of FY03, each of the Bureaus developed specific outcome-oriented measures of success that link attainment of a programmatic environmental goal, such as promoting healthy stream flow or increasing the rate of waste site cleanups, with a assessment of the extent and nature of a sector's non-compliance. As set out in more detail below, specific compliance rate improvement targets have been set for which data will be collected in FY04

The **Bureau of Resources Protection** will continue to refine its drinking water and ground water measures and in addition, concentrate on Water Management Act compliance to redress the environmental impacts associated with excessive water withdrawals.

Environmental Goal: Safe drinking water

> Primary Measure of Success: Proportion of population served by systems in compliance with all *health-based* standards, not including reporting violations. Compliance goal for SFY04 is to maintain the rate of 96% of population served by systems in compliance with all health-based standards.

Environmental Goal: Prevent surface water degradation from "point" discharges to groundwater.
Primary Measure of Success: Improve compliance with groundwater permit discharge limits.

- Reduce the rate of significant noncompliance (SNC) with effluent limits to less than 15% by 6/30/04

Environmental Goal: Healthy stream flow

Primary Measure of Success: Percent of WMA registrants and/or permit holders in compliance with WMA authorized system-wide withdrawal volumes.
1. Raise cranberry bog compliance with WMA authorized system-wide withdrawal volumes.
2. Raise public water supply (PWS) compliance with WMA authorized system-wide withdrawal volumes by December 31, 2004.
3. Raise non-PWS/non-bog compliance with WMA authorized system-wide withdrawal volumes by December 31, 2004.

Compliance rate targets for each of these particular sectors have been set using performance standards applicable to each sector, for instance, authorized system water withdrawal, unaccounted for water use, per capita use and percentage of facilities brought into WMA universe.

The **Bureau of Waste Site Cleanup** has set out three primary environmental goals for FY04 against which to measure their success in FY04: maximize risk reduction, maintain a high rate of cleanup, and ensure the quality of cleanups.

Environmental Goal: Maximize risk reduction

Primary Measure of Success: Percent of IRA sites (sites at which Immediate Response Actions are required) that are in compliance with IRA submittal requirements, one year after discovery of the condition requiring the IRA.

- Ensure that 75% of IRA are in compliance with submittal requirements on their one-year anniversary date.

Environmental Goal: Maintain a high rate of cleanup

Primary Measure of Success: Percent of sites for which a Response Action Outcome (RAO) or Remedy Operation Status (ROS) statement is submitted within six years of release notification, in accordance with regulatory deadlines**.**

- Ensure that RAO or ROS statements were received for 85% of sites within six years of notification

Environmental Goal: Ensure the quality of cleanups

Primary Measure of Success: Percent of sites receiving a Level 1 Audit that require C/E response follow-up.

- Ensure that the number of sites receiving C&E follow-up is at least equal to the number of sites recommended for such follow-up in the preceding year (18.6%)

The **Bureau of Waste Prevention** selected three sectors to focus on: major air sources, solid waste transfer stations and printers. Compliance rates will be based on representative performance indicators that will define significant non-compliance. Compliance reviews will focus first on the compliance with reporting and monitoring requirements and the reliability of the facility performance data that is reported.

Environmental Goal: Compliance with air quality standards and acid rain standards.

Primary Measure of Success: 90% of air operating permit facilities will not have an excess emission of NOx or VOCs that results in an enforcement action.
1.Permits: 100% of facilities known to DEP that are required to have an air operating permit actually have been issued or have applied for one

2. Report Submission: 100% of facilities submit required:

- Annual compliance reports for NOX and VOC
- Semi annual compliance reports for NOX and VOC

3. Report Accuracy : For NO_X and VOC: 90 % of reports are determined to be a reliable representation of the facilities compliance status.

Environmental Goal: Compliant Transfer Station Operation

Primary Measure of Success: Transfer stations are established and constructed in accordance with approved plans, and operated and maintained in accordance with permit and regulatory requirements. Sector compliance will be measured based on the percentage of facilities that do not receive a NON or HLE for failure to have a valid permit or not operating in compliance with key performance indicators.
1. 98% of facilities obtain required permits
2. 90% operate in compliance with performance indicators including vector, litter and odor controls, controlling stormwater and floor drains, reporting, hazardous waste management, special permits, tonnage limitations and waste bans.

Environmental Goal: Decrease environmental impact of printing operations regulated under the Environmental Results Program. (For full information about ERP, please go to http://www.state.ma.us/dep/erp/erphome.htm).

Primary Measure of Success: Compliance rate and pollution prevention practices in printing operations.
1. 90% of known printers submit their compliance certification
2. The sector average for the Environmental Practice Business Indicators is 8.5 or above.

GOING FORWARD

The coming fiscal year will present many challenges as DEP works to align achievement of its environmental protection goals with its available resources. Unequivocally, compliance and enforcement will remain a high priority.

In addition to the programs summarized earlier in the section on the expansion of outcome performance measurement, the Department intends to launch a set of initiatives in FY04 that exemplify the principles of information-based strategic targeting, meaningful measurement and streamlined implementation.

- Wetlands Enforcement Initiative. A computer assisted analysis of aerial photos of wetland resources taken over the last decade and an investigation into the causes of wetland destruction have revealed that at least half of the wetlands losses in Massachusetts are the result of illegal activity. DEP intends to put a stop to illegal wetlands filling and as a first step is undertaking an aggressive enforcement initiative. The enforcement actions will publicize our new capacity to find illegal fills even when away from public view, and our intention to require restoration and impose significant penalties, with the goal of preventing wetlands destruction by providing strong and effective deterrence.

- Beyond ERP. The Environmental Results Program (ERP) laid the foundation of a novel regulatory approach that evaluates compliance based on a sector's unique performance indicators and then designs the compliance assistance and enforcement responses to fit the sector's particular operational characteristics and compliance deficiencies.

  Beyond ERP is designed to build on the ERP foundation and raise it to the next level by extending its principles to a broad array of facilities and enhancing its performance measurement methodology to incorporate compliance rate targets and root cause analysis. The information produced by this combination of advanced targeting and assessment will boost DEP's capability to devise streamlined compliance assurance solutions that address specific performance shortfalls, measure when non-compliance problems are resolved, while allowing the Department to strategically realign our C/E resources to focus on the most important and intransigent problems.

- Urban Area Compliance Assurance. The state of the environmental quality of our urban areas is a critical concern to DEP for several important reasons. Residents of these communities are often subjected to multiple sources of pollution that have been demonstrated to contribute to elevated incidence or risk of adverse health effects. Older, deteriorated housing and abandoned industrial operations are also more likely to create potential neighborhood exposures to asbestos and other contaminants. Properties contaminated with oil and hazardous waste whose assessment and clean-up have languished because of recalcitrant property owners and other responsible parties not only present potential health and environmental impact concerns, but also impede the growth of commercial and residential development. Reducing urban pollution

sources and accelerating site clean-ups directly complements sustainable development goals by combating the surplus of environmental quality stressors and the shortage of suitable land, which leads developers into greenfields and away from brownfields.

Using facility and site information data and GIS mapping systems, in concert with inter-agency brownfield development initiatives, DEP will implement an urban enforcement strategy that will target hazardous waste sites, mobile and stationary air pollution sources, and asbestos removal and renovation projects with the aim of reducing air contamination levels, increasing the rate and quality of site clean-ups and supporting the development of sustainable businesses and affordable housing.